

Alice Fuerst

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MOD 920686221

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NPL

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Project E

8-19-88

MEMORANDUM

SUBJECT: Public Comments Received on Region VI NPL Candidates

FROM: Herie Walter

TO: SCOM and REIR Staff

The public comment period for sites proposed for the NPL has now ended and I have copies of the comments received. Thus far, the MTHL Corp. is reviewing these comments and will address as many comments as possible. Comments regarding site specific technical issues or sampling procedures if any will need to be answered by the Regional staff.

As a general rule, HQ will finalize sites when the majority of these sites in the particular update are ready. That is, if the comments have been addressed, the site will be eligible for final listing. After we have worked with MTHL, we will receive a draft copy of the proposed wording of the response to comments. After any revisions on our part, HQ will finalize the Agency's response to comments and publish in the Federal Register. Any sites with unresolved issues at the time when the new HRS II is effective will drop off the NPL and need to be rescored. Obviously, HQ wants as few sites as possible to fall off, but this will not hold up an update for a few sites. It is to our benefit to resolve the comments as early as possible.

With this in mind, I would suggest each project officer contact MTHL on their respective site after reviewing the comments received. Le Russell (615) 867-7676 of MTHL will be able to tell you the name of the MTHL representative working on our sites. During this process, if you need assistance please feel free to contact me with any questions.

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SUPERFUND RECORDS



Environmental Management Services Company/1759 Andover Drive/Cheyenne Wyoming 82001

Mr Stephen Lingle
Director, Hazardous Site Evaluation Division
Attn NPL Staff
Office of Emergency and Remedial Response (WH-548A)
U S Environmental Protection Agency
401 M Street SW
Washington, DC 20460

- 8/19/88

Dear Mr Lingle

These comments on the proposed listing of the Oronogo-Duenweg Mining Belt site located in Jasper County, Missouri as part of the seventh update to the National Priorities List ("NPL") for which notice was provided on June 24, 1988 (53 FR 23988) are submitted on behalf of the following companies ASARCO, Inc , Eagle-Picher Industries, Inc , Gold Fields Mining Corporation, and Sun Company, Inc These comments on behalf of the above companies are not an admission of responsibility, liability, status as a potentially responsible party, or otherwise concerning the propriety of the U S Environmental Protection Agency's (EPA's) activities at the Oronogo-Duenweg Mining Belt site, and should not be construed as such

The above companies have specific concerns and comments on the Hazard Ranking System (HRS) scoring and the required special waste considerations given to this site They also question the source and adequacy of the data used to support the HRS scoring and the "Special Study Waste Support Documentation" Comments on these areas of concern are discussed individually below

SITE DELINEATION

As a preliminary matter, the companies are uncertain as to the specific boundaries of the Oronogo-Duenweg Mining Belt Site The most specific information on the site boundaries contained in the available documents is that the site is approximately 2 miles wide by 10 miles long and that the specific site as evaluated includes approximately 10 square miles (6400 acres) The companies believe that the EPA should provide a precise legal description of the boundaries of the site investigated and being proposed

for inclusion on the National Priorities List (NPL) Also, given the extent of historic mining in the Missouri portion of the Tri-State Mining District, they also believe that the Agency should provide detailed information on the criteria used to delineate the Oronago-Duenweg Mining Belt Site

HRS SCORING

The specific comments on the HRS scoring of the Oronago-Duenweg Mining Belt Site pertain to the presence of an observed release to ground water, the targets for the ground water and surface water routes and the score assigned to the surface water route characteristics

The Hazard Ranking System manual (EPA, 1984)¹ provides that the EPA may score a site as having an observed release to ground water only if the Agency has quantitative evidence that a contaminant from the facility is present in ground water or in a well in the vicinity of the facility at a significantly higher level than the background level The "Documentation Records for the Hazard Ranking System" (Documentation Records) and other available information on the site documents the presence of certain metallic ions at concentrations above the EPA Maximum Contaminant Levels (MCLs) for drinking water, but does not provide any information on the background level concentrations The EPA appears to have erroneously assumed that the background levels for the metallic ions are at or below the MCLs and that the presence of metallic ions in the water sampled from the shallow aquifer wells at concentrations in excess of these criteria constitutes direct evidence that a release to ground water has occurred

As documented by detailed studies conducted on other undisturbed areas containing sulfide ore bodies -- such as near the Red Dog Deposit in Northwest Alaska (EPA, 1984),² and the Flambeau and Crandon Deposits in Wisconsin

¹EPA, 1984 Uncontrolled Hazardous Site Ranking System, A Users Manual HW-10

sin (Wisconsin Department of Natural Resources, 1976³ and 1986⁴) -- elevated concentrations of metallic ions in surface and ground waters in the background condition are normal and typical for massive sulfide mineralized areas such as the Oronogo-Duenweg Mining Belt. The presence of metallic ions above the MCLs in an area containing a massive sulfide deposit would also be expected based on basic geochemical principles. In fact, geologists use these principles to explore for and to locate sulfide mineralized areas.

Accordingly, since metallic ions are natural constituents of surface and ground waters and the concentration of these ions are naturally elevated above "normal" background levels in the vicinity of sulfide mineralization, the measured exceedances of MCLs for these ions in ~~the~~ wells sampled as part of the site investigation for the Oronogo-Duenweg Mining Belt does not constitute evidence that a contaminant from the facility is present at a significantly higher level than background level or that an observed release to ground water has occurred.

With respect to the targets for the ground and surface water routes, the companies believe that the EPA has assigned values for both ground and surface water uses which are inconsistent with available information, including the documentation information supplied with the HRS scoring. The Hazard Ranking System manual provides four possible values which can be applied to ground water use based on general guidelines provided in the manual. The EPA assigned a value of 3 for ground water use which signifies that ground water from the aquifer of concern -- the shallow aquifer -- is used as a source of drinking water and that no municipal water from

²EPA, 1984 Draft Environmental Impact Statement, Red Dog Mine Project, Northwest Alaska EPA 10-AK-WULIK-NPDES-84

³Wisconsin Department of Natural Resources, 1976 Environmental Impact Statement for Flambeau Mining Corporation's Proposed Copper Mine, Rusk County, Wisconsin

⁴Wisconsin Department of Natural Resources, 1986 Final Environmental Impact Statement, Exon Coal and Minerals Co.'s Zinc-Copper Mine, Crandon, Wisconsin

alternative unthreatened sources is presently available While it is acknowledged that there are some private wells which utilize the shallow aquifer as a source of drinking water in the Oronogo-Duenweg Mining Belt, there are also alternative unthreatened municipal water sources presently available. There are at least three rural water districts serving the area with water from the unthreatened deep aquifer and water distribution lines covering the entire area. Accordingly, ground water use should have been assigned a value of 2 rather than 3. 7

As with ground water, the Hazard Ranking System manual provides four possible values which can be applied to surface water use. The EPA assigned a value of 2 for surface water use which implies that surface water is used for irrigation, commercial food preparation, recreation and other industrial and commercial uses. Yet the EPA did not identify any uses for the area surface water systems other than general industrial or commercial uses. The Documentation Records for the HRS note that "Center Creek may be used for irrigation purposes however this could not be documented", and the Site Evaluation Report (EPA, 1987⁵) states that "No information about swimming activities is available for the area." Given the lack of documentation for uses other than general industrial and commercial uses and the HRS manual's procedures for assigning values without specific data, the surface water use category should have been assigned a 1 rather than a 2.

As part of the surface water route characteristics, the Hazard Ranking System uses the average slope of the facility and the average slope of the shortest path between the facility boundary and the nearest downhill surface water (intervening terrain) as an indicator of the potential for contaminated runoff or spills at a facility to be transported to surface water. The assigned value for this category is determined based on a matrix of these two factors provided as a table in the HRS manual.

⁵EPA, 1987 Site evaluation for Oronogo-Duenweg Mining Belt, Jasper County, Missouri TDD No T17-8701-10

The EPA assigned a maximum value of 3 for the facility slope and intervening terrain category. The Documentation Records note that the Agency considered the average slope of the facility to be greater than 8 percent -- based apparently on some waste piles with slopes greater than this value -- and the intervening terrain to have an average slope of greater than 5 percent -- based on a statement that "Tailings piles lie directly adjacent to Center Creek and Mineral Branch, slopes can be steep greater than 5 percent." In review of this matter, it is obvious that the EPA used maximum observed slopes rather than average slopes as required by the HRS procedures.

In the Site Evaluation Report, the site is described as being a 2-mile wide by 10-mile long area between Oronogo and Duenweg, Missouri. The report also states that "Elevations vary from 1200 feet on the East to 800 feet on the West." A change in 400 feet vertical elevation (1200 feet minus 800 feet) over 2 miles (the east-west distance of the site) results in a maximum average facility slope of 3.7 percent. The true average over the entire facility would likely be lower yet. However, even for conservative estimating purposes, the average facility slope should be placed in the 3 to 5 percent range category provided in the matrix table, rather than greater than 8 percent category used by the EPA for HRS scoring.

As noted above, the Documentation Records state that the maximum slope of the intervening terrain can be greater than 5 percent. No information is provided on the average slope of the intervening terrain, however, even for conservative estimating purposes, the average intervening terrain slope should be placed in the 3 to 5 percent range category provided in the matrix table, rather than 5 to 8 percent category used by the EPA for HRS scoring.

With an average facility slope of 3 to 5 percent and an average intervening terrain slope of 3 to 5 percent, the matrix provides an assigned value of 1 for the facility slope and intervening terrain category. Accordingly, the value for this category should be 1 (or 0) rather than 3 as assigned by the EPA.

In summary, the companies believe that the EPA has mis-evaluated and assigned incorrect values for several categories of the surface and ground water route components of the HRS scoring for the Oronogo-Duenweg Mining Belt Site. Revising the existing HRS scoring to correct these obvious errors results in lowering of the composite site score from 46 33 to 28 41, as documented on the revised HRS worksheets provided as Attachment 1 to this letter. Since the revised composite score is below 28 5 -- the minimum score required for inclusion on the National Priorities List (NPL) -- the companies strongly recommend that the EPA reconsider the existing scoring and eliminate this site as a candidate for the NPL.

SPECIAL WASTE CONSIDERATIONS

Under Section 105(g) of CERCLA, before the EPA adds to the NPL any facility at which significant quantities of "special study wastes" are present, the Agency must consider certain factors relating to the effect that the special study wastes had on the HRS scoring of the site and relating to the concentration, toxicity and effects on the environment and public health of the hazardous substances that are constituents of the special study waste. Congress added Section 105(g) in order to counter the potential for "bias in the current hazard ranking system against sites containing large quantities of waste with the presence of trace toxic metals, such as typical mining wastes." See S Rep No 11, 99th Cong, 1st Sess 40 (1985). Without that section, Congress feared that use of the HRS might overestimate the health and environmental hazard posed by special study waste sites and lead to the expenditure of CERCLA funds on relatively low risk sites.

All of the wastes evaluated by EPA at the Oronogo-Duenweg Mining Belt Site are associated with ore extraction and processing and are designated as a special study waste under Section 105(g) of CERCLA and section 3001(b) (3)(A)(ii) of RCRA. In order to comply with Section 105(g) the EPA prepared an addendum to the HRS scoring document for the Oronogo-Duenweg Mining Belt Site which purports to meet the requirements of this section.

The companies do not believe that this addendum -- a brief memorandum entitled "Special Study Waste Support Documentation" -- adequately considered the Congressional concerns underlying Section 105(g). The memorandum does not address one of the two areas required to be considered, and merely recites with little or no analysis the other areas to be addressed under the statute.

The companies do not believe that the mere recognition of the fact that "all threats from the site are due to special study wastes," as contained on page 3 of the Special Study Waste Support Documentation, is sufficient to address the statutory requirement of Section 105(g)(2)(A) or the Congressional concerns underlying this section. Given the known bias in the scoring of sites containing significant quantities of special study wastes using the current Hazard Ranking System, it is clear that the purpose of Section 105(g)(2)(A) was to have the EPA consider the appropriateness of the score derived from sites containing special study wastes, rather than just documenting the presence of these wastes at sites being scored. The companies believe that proper consideration of this issue is critical in order to meet the congressional concerns underlying Section 105(g), and that with proper analysis it would be evident that the presence of special study wastes at the Orongo-Duenweg Mining Belt Site had a profound effect on the HRS score for this site.

For example, in determining the waste characteristics score for the HRS scoring of both the surface and ground water routes, the current HRS procedures require the assigning of the highest possible (worst) values for toxicity, persistence and waste quantity provided for under the existing Hazard Ranking System. This assignment results in a total waste characteristics score of 26 out of a maximum of 26, implying that the mine waste present on this site are equally as hazardous and potentially as threatening to human health and the environment as more than 10,000 drums of the most toxic organic chemical known to man.

Congress clearly recognized this incongruity in the Hazard Ranking System, and directed the Agency to make appropriate adjustments to differentiate sites with large volumes of wastes with low concentrations of

highly persistent and relatively toxic contaminants (i.e., special study wastes)

Since the total waste characteristics score is heavily weighted in both the surface and ground water route scores, this flaw had a major effect on the overall HRS scoring for this site. For example, if the total waste characteristics score is set at the mid-point (13) -- which likely still overestimates the relative hazard of these wastes -- the composite HRS would be reduced well below the level necessary for inclusion on the NPL, even without revising the other areas discussed in the previous section. The Special Study Waste Support Documentation does not address the effect that this flaw had on the HRS score for the Oronogo-Duenweg Mining Belt and, accordingly, the necessary statutory considerations have not been satisfied in order to propose this site for inclusion on the NPL.

Although EPA did provide some discussion of the other factors under 105(g)(2)(B) which must be considered before listing a site containing special study wastes, the companies do not believe that this information was sufficient to fulfill the requirements of that section. Specifically, they do not believe that adequate information was provided on the types and quantity by types of the special study wastes present on the site, the concentration of potentially hazardous substances that are constituents of the types of special study waste present, or the degree of hazard to human health or the environment posed by the release of hazardous constituents at the facility.

The only source of potential contamination identified for the Oronogo-Duenweg Mining Belt is "mine tailings". Yet the Special Waste Support Documentation and other available information does not provide any data on the types of mine wastes present or the concentration of metallic ions contained in these wastes or their mobility and potential bioavailability. The only data provided are crude, and somewhat conflicting, information on the total quantity of wastes present. Based on the EPA's experience with the Cherokee County Site in Kansas, the Agency is aware that there are several types of mining wastes present within the Tri-State District and that the concentrations of transportable metallic ions varies considerably.

between types To lump all types of potential mine wastes into one category -- mine tailings -- and to not provide any information on the characteristics of these special study wastes is technically unsupportable and does not allow for adequate consideration of the requirements of Section 105(g)

While the Special Study Waste Support Document does supply some general information on potential exposure pathways, and limited analytical data for the surface and ground waste resources of the area, the companies do not believe that the information provided fulfills the requirements of Section 105(g)(2)(B) The document does not provide a complete exposure assessment, or any consideration as to the degree of hazard to human health or the environment posed by the release of metallic ions from the site, ~~as~~ required by Section 105(g)(2)(B) There is also no consideration given to the naturally elevated metallic ions concentrations that are universally present in areas containing massive sulfide ore bodies, nor an attempt to distinguish between natural "contamination" or contamination caused by a release from the facility

Finally, the EPA's considerations provided in the Special Study Waste Documentation are based almost entirely on the total quantity of "tailings" present at the site, the Agency has ignored consideration of the "actual concentrations of hazardous substances" as specifically required by Section 105(g)(2)(B) Further, the Agency even acknowledges on page 3 of the Special Study Waste Support Documentation that "The quantity of hazardous constituents deposited at the site cannot be determined due to the long period of operational time " Accordingly, the EPA was unable to obtain even the basic information upon which the required Section 105(g)(2)(B) considerations were to be based

CONCLUSIONS

In short, given the obvious errors identified with the EPA's HRS scoring of this site and the significant inadequacies of the Special Study Waste Support Document in fulfilling the requirements of Section 105(g),

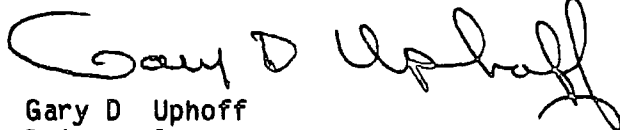
the companies believe that the EPA should drop any future considerations of the inclusion of the Oronogo-Duenweg Mining Belt Site on the NPL. They believe that any other decision on this site will likely result in the unnecessary and perhaps unlawful expenditures of public funds.

If, however, the EPA elects to continue its evaluation of this site for potential inclusion on the NPL, they strongly urge the Agency either to carefully reevaluate its current HRS scoring of the site, including the requirements of Section 105(g), or to rescore this site after the revised Hazard Ranking System is adopted. Given the fact that this site has been present for over 100 years with no confirmed hazards to human health and the fact that the site investigation did not identify any imminent hazards to human health or the environment, there is no need to make a hasty ~~or~~ unsupported decision on the status of this site under CERCLA.

Thank you for your consideration of these comments. To the extent that it may be necessary to do so, we request that these comments be included in the administrative record for the Oronogo-Duenweg Mining Belt Site.

Respectfully submitted,

ENVIRONMENTAL MANAGEMENT SERVICES COMPANY



Gary D. Uphoff
Principal

On behalf of

ASARCO, Inc
Eagle-Picher Industries, Inc
Gold Fields Mining Corporation
Sun Company, Inc

GDU mnw

cc Mitchell H. Bernstein, Esq
Arnold E. Godduhn, Esq
Corinne M. Faris, Esq
John Richardson
Laurie Grossi-Tyson, Esq

Ground Water Route Work Sheet						
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max Score	Ref (Section)	
1 Observed Release	0 45	1	0	45	31	
If observed release is given a score of 45, proceed to line 4 If observed release is given a score of 0 proceed to line 2.						
2 Route Characteristics					3.2	
Depth to Aquifer of Concern	0 1 2 3	2	6	0		
Net Precipitation	0 1 2 3	1	1	3		
Permeability of the Unsaturated Zone	0 1 2 3	1	2	3		
Physical State	0 1 2 3	1	1	3		
Total Route Characteristics Score			10	19		
3 Containment	0 1 2 3	1	3	3	33	
4 Waste Characteristics					34	
Toxicity/Persistence	0 3 6 9 12 15 18	1	18	18		
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1	8	8		
Total Waste Characteristics Score			26	28		
5 Targets					39	
Ground Water Use	0 1 2 3	3	6	9		
Distance to Nearest Well/Population Served	0 4 8 10 12 16 18 20 24 30 32 35 40	1	30	40		
Total Targets Score			36	48		
6 If line 1 is 45 multiply 1 x 4 x 9			23000			
If line 1 is 0 multiply 2 x 3 x 4 x 9				57 330		
7 Divide line 6 by 57 330 and multiply by 100	Sgw = 48 9796					

FIGURE 2
GROUND WATER ROUTE WORK SHEET

Surface Water Route Work Sheet							
Routing Factor	Assigned Value (Circle One)	Multi- plier	Score	Max Score	Not (Section)		
1 Economic Release	0 1 2 3 4 5 6 7 8 9	1	0	45	45		
If economic release is given a value of 45 proceed to line 4 If economic release is given a value of 0 proceed to line 2							
2 Route Characteristics					42		
Facility Steps and Improving Terrain	0 1 2 3	1	1	3			
1-yr 24-hr Rainfall	0 1 2 3 4 5 6 7 8 9	1	3	3			
Distance to Nearest Surface Water	0 1 2 3 4 5 6 7 8 9	2	6	0			
Channel Size	0 1 2 3	1	1	3			
Total Route Characteristics Score			11	15			
3 Containment	0 1 2 3 4 5 6 7 8 9	1	3	3	43		
4 Waste Characteristics					40		
Textile/Pollutants	0 3 6 9 12 15 18 21 24 27 30 33 36 39 42 45	1	12	10			
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8 9	1	8	0			
Total Waste Characteristics Score			26	20			
5 Targets					49		
Surface Water Use	0 1 2 3 4 5 6 7 8 9	3	3	9			
Distance to a Sensitive Environment	0 1 2 3 4 5 6 7 8 9	2	0	0			
Population Served/Distance to Water Intake Downstream	0 4 8 12 16 20 24 28 32 36 40	1	0	40			
Total Target Score			3	39			
6 If line 1 is 45 multiply 1 x 4 = 4			254	64 350			
7 If line 1 is 0 multiply 2 x 3 = 4 x 4 = 16							
8 Divide line 6 by 64 350 and multiply by 100			S _{SW} = 4 0000				

FIGURE 7
SURFACE WATER ROUTE WORK SHEET

Air Route Work Sheet						
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max Score	Ref (Section)	
1 Observed Release	0	45	1	0	45	
Date and Location						
Sampling Protocol						
If line 1 is 0 then $S_0 = 0$ Enter on line 5 If line 1 is 45 then proceed to line 2						
2 Waste Characteristics					52	
Activity and Incompatibility	0 1 2 3	1		3		
Toxicity	0 1 2 3	3		9		
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8		
Total Waste Characteristics Score				20		
3 Targets					53	
Population Within 5-Mile Radius	0 9 12 15 18 21 24 27 30	1		30		
Distance to Sensitive Environment	0 1 2 3	2		6		
Land Use	0 1 2 3	1		3		
Total Targets Score				39		
4 Multiply 1 x 2 x 3				35 100		
5 Divide line 4 by 35 100 and multiply by 100				$S_2 = 0$		

FIGURE 9
AIR ROUTE WORK SHEET

FIGURE 10
WORKSHEET FOR COMPUTING SM

28 4062		$\sqrt{s_2^2 + s_2^2 + s_2^2} / 1.73 = s_m$
49 1427		$\sqrt{s_2^2 + s_2^2 + s_2^2}$
24 15 0012		$s_2^2 + s_2^2 + s_2^2$
0000 0	0	Alt Ratio (S ₀)
0000 91	4 0000	Surface Water Ratio (S ₀)
2399 0012	48 9796	Groundwater Ratio (S ₀)
25	5	